Amendments to the Claims

Please amend Claims 1, 11, 21, 22 and 23. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Currently Amended) A computer ~~implemeted~~ implemented process for designing a computer model based system architecture, comprising:

providing a business process design, the business process design describing a plurality of business processes and defining a set of business requirements for each business process;

constructing a multi-layer mathematical model of a proposed system architecture supporting the business process design, the multi-layer mathematical model being implemented on a computer and the layers of the multi-layer model comprising a business layer, an application layer, and a technology layer;

modeling performance metrics for each layer of the multi-layer model of the proposed system architecture including continuous service of the proposed system architecture, said constructing and modeling being in a manner uninfluenced by a prior existing related system architecture and measured performance thereof;

comparing the modeled performance metrics with the set of business requirements for each business process, said comparing producing respective indications of unacceptable performance metrics of one or more business processes that do not satisfy the set of business requirements defined for them based on the produced indications; and

determining modifications to the proposed system architecture.

2. (Previously Presented) The process of claim 1, further comprising:

using the determined modifications to modify the proposed system architecture and forming a modified proposed system architecture;

modeling updated performance metrics for each layer of the model of the modified proposed system architecture;

comparing the updated performance metrics with the set of business requirements for each business process; and

outputting a description of the modified proposed system architecture if the updated performance metrics satisfy the set of business requirements.

3. (Previously Presented) The process of claim 1, wherein determining modifications to the proposed system architecture, further comprises:

identifying component models in the application and technology layers that support the one or more business processes having unacceptable performance metrics;

evaluating the performance metrics of the supporting component models in order to identify one or more supporting component models having unacceptable performance metrics; and

searching a data store for modifications to improve the unacceptable performance metrics of the one or more supporting component models.

4. (Original) The process of claim 3, wherein the modifications to improve the unacceptable performance metrics of the one or more supporting component models include replacement of the one or more supporting component models with alternate component models from the data store.

5. (Previously Presented) The process of claim 3, further comprising:

proposing that the business process design be modified, if none of the supporting component models in the application or technology layers have acceptable performance metrics.

6. (Previously Presented) The process of claim 1, wherein constructing the multi-layer mathematical model of the proposed system architecture, comprises:

mapping each business process to an application component model in the applications layer, each application component model linked to one or more component models in the application and technology layers, which support the application component model.

7. (Original) The process of claim 6, wherein the application layer further comprises a technology bus, the technology bus modeling an abstract interface for data access or technology services between the components modeled in the application and technology layers.

8. (Original) The process of claim 6, wherein the application layer further comprises a application bus, the application bus modeling a communication, distribution, and management interface between application component models in the application layer.

9. (Original) The process of claim 6, wherein application component models in the application layer are subdivided into a business applications layer and an application engines layer, the business applications layer comprising models of application components providing real-time or right-time processing, the application engines layer comprising models of application components that provide deferrable processing and support one or more application components in the business applications layer.

10. (Original) The process of claim 6, wherein any combination of component models supporting a business process may be substituted to improve unacceptable performance metrics of the business process.

11. (Currently Amended) A computer system for designing a computer model based system architecture, comprising:

a business process design, the business process design describing a plurality of business processes and defining a set of business requirements for each business process;

an architecture construction module responsive to the business process design, the architecture construction module constructing a multi-layer mathematical model of a proposed system architecture supporting the business process design, the multi-layer mathematical model being implemented on a computer and the layers of the multi-layer model comprising a business layer, an application layer, and a technology layer;

a performance modeling module coupled to the architecture construction module, the performance modeling module modeling performance metrics for each layer of the multi-layer model of the proposed system architecture including continuous service of the proposed system architecture, said constructing and modeling being in a manner uninfluenced by a prior existing related system architecture and measured performance thereof;

a comparison module coupled to receive the modeled performance metrics and the business process design, the comparison module comparing the modeled performance metrics with the set of business requirements for each business process and determining any unacceptable performance metrics of one or more business processes that do not satisfy the set of business requirements defined for them;

a rule-based modification engine responsive to the comparison module, the rule-based modification engine determining modifications to the proposed system architecture in order to improve the unacceptable performance metrics determined by the comparison module; and

an output module coupled between the rule-based modification engine and the architecture construction module, the output module proposing the determined modifications to the proposed system architecture.

12. (Previously Presented) The system of claim 11, wherein:

the performance modeling module further models updated performance metrics for each layer of the model of the proposed system architecture with the determined modifications;

the comparison module further compares the updated performance metrics with the set of business requirements for each business process; and

the output module further outputs a description of the proposed system architecture as modified by the determined modifications if the updated performance metrics satisfy the set of business requirements.

13. (Original) The system of claim 11, wherein:

the architecture construction module further identifies supporting component models in the application and technology layers that support the one or more business processes having unacceptable performance metrics;

the comparison module further evaluates the performance metrics of the supporting component models in order to identify one or more supporting component models having unacceptable performance metrics; and

the rule-based engine further searches a data store for modifications to improve the unacceptable performance metrics of the one or more supporting component models.

14. (Original) The system of claim 13, wherein the modifications to improve the unacceptable performance metrics of the one or more supporting component models include replacement of the one or more supporting component models with alternate component models.

15. (Previously Presented) The system of claim 13, wherein:

the output module further proposes that the business process design be modified, if none of the supporting component models in the application or technology layers have acceptable performance metrics.

16. (Original) The system of claim 11, wherein the architecture construction module maps each business process to an application component model in the applications layer, each application component model being linked to one or more component models in the application and technology layers, which support the application component model.

17. (Original) The system of claim 16, wherein the application layer further comprises a technology bus, the technology bus modeling an abstract interface for data access or technology services between the components modeled in the application and technology layers.

18. (Original) The system of claim 16, wherein the application layer further comprises an application bus, the application bus modeling a communication, distribution, and management interface between application component models in the application layer.

19. (Original) The system of claim 16, wherein application component models in the application layer are subdivided into a business applications layer and an application engines layer, the business applications layer comprising models of application components providing real-time or right-time processing, the application engines layer comprising models of application components that provide deferrable processing and support one or more application components in the business applications layer.

20. (Original) The system of claim 16, wherein any combination of component models supporting a business process may be substituted to improve unacceptable performance metrics of the business process.

21. (Currently Amended) A computer system for designing a system architecture, comprising:

means for receiving a business process design, the business process design describing a plurality of business processes and defining a set of business requirements for each business process;

means for constructing a multi-layer mathematical model of a proposed system architecture supporting the business process design, the multi-layer mathematical model being implemented on a computer and the layers of the multi-layer model comprising a business layer, an application layer, and a technology layer;

means for modeling performance metrics for each layer of the multi-layer model of the proposed system architecture <u>including continuous service of the system architecture, the means for constructing and the means for modeling being free of influence of an existing system architecture and any measured performance of the existing system</u>;

means for comparing the modeled performance metrics with the set of business requirements for each business process;

means for determining modifications to the proposed system architecture in order to improve unacceptable performance metrics of one or more business processes that do not satisfy the set of business requirements defined for them; and

means for proposing the modifications to the model of the proposed system architecture.

22. (Currently Amended) An information system architecture that is generated by the computer implemented process of:

providing a business process design, the business process design describing a plurality of business processes and defining a set of business requirements for each business process;

constructing a multi-layer mathematical model of a proposed system architecture supporting the business process design, the multi-layer mathematical model being implemented on a computer and the layers of the multi-layer model comprising a business layer, an application layer, and a technology layer;

modeling performance metrics for each layer of the multi-layer model of the proposed system architecture including continuous service of the system architecture, said constructing and modeling being in a manner uninfluenced by a prior existing system architecture and measured performance thereof;

comparing the modeled performance metrics with the set of business requirements for each business process, said comparing producing respective indications of unacceptable performance metrics of one or more business processes that do not satisfy the set of business requirements defined for them based on the produced indications; and

determining and incorporating modifications to the proposed system architecture.

23. (Currently Amended) An article of manufacture, comprising:

a computer-readable memory device;

a set of computer operating instructions embodied on the memory device, including instructions for designing a model based system architecture, comprising instructions for:

providing a business process design, the business process design describing a plurality of business processes and defining a set of business requirements for each business process;

constructing a multi-layer mathematical model of a proposed system architecture supporting the business process design, the layers of the multi-layer model comprising a business layer, an application layer, and a technology layer;

modeling performance metrics for each layer of the multi-layer model of the proposed system architecture including continuous service, said constructing and modeling being in a manner uninfluenced by a prior existing system architecture and measured performance of that prior existing system architecture;

comparing the modeled performance metrics with the set of business requirements for each business process, said comparing producing respective indications of unacceptable performance metrics of one or more business processes that do not satisfy the set of business requirements defined for them based on the produced indications; and

determining modifications to the proposed system architecture.

24. (Cancelled)